

AMENDMENTS TO THE SPECIFICATION

Replace Paragraph 0018 with the following new paragraph:

[0018] Particularly, vehicle 12 is of the type having a front pair of axle half-shafts 14, 15 which cooperatively form a front axle (i.e., an axle which is disposed under the driver (not shown)) and a rear pair of axle half shafts 16, 17 which cooperatively form a rear axle. Vehicle 12 further includes front wheels 18, 20-18' which are respectively attached to half-shafts 15, 14 and rear wheels 22, 24-19, 19' which are respectively attached to half-shafts 17, 16. Further, vehicle 12 includes a torque generator 20, such as and without limitation an internal combustion engine, and a transmission assembly 22 which is operatively coupled to the torque generator 20, such as by a crankshaft 23. The vehicle 12 further includes a front differential assembly 32 which operatively receives the front axle half-shafts 14, 15, a rear differential assembly 30 which operatively receives the rear axle half-shafts 16, 17, and a pair of substantially identical driveshafts 34, 36 which are respectively coupled to and which extend from the differential assemblies 32, 30.

Replace Paragraph 0021 with the following new paragraph:

[0021] In operation, torque, which is produced by the torque generator 20, is communicated to the transmission assembly 22 by the crankshaft 23. The received torque is then communicated to the torque transfer assembly 60 by the driveshaft 70. As previously delineated, a certain first portion of the received torque is then communicated to the driveshaft 34 and a certain second portion of the received torque is communicated to the driveshaft 36 by the torque transfer assembly 60 which performs this torque allocation under the control and supervision of the controller 62. Further, the controller 62 performs the control methodology of the preferred embodiment of the invention, which is shown in Figure 2. As further delineated below, the methodology 100 of the preferred embodiment of the invention causes the torque transfer assembly 60 to dynamically “re-allocate” or modify the amount of torque which is communicated to the driveshafts 34, 36 in response to an actual slip or to a perceived need to avoid or reduce

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the likelihood of the occurrence of slip. In another non-limiting embodiment of the invention, the speed of the wheels 18, ~~20, 22, 24~~^{18'}, 19, 19' may be selectively controlled by the controller 62 instead of controlling the driveshafts 34, 36.

Replace Paragraph 0023 with the following new paragraph:

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[0023] Step 102 is followed by step 104 in which the controller 62 enters a "slip detection and control mode". Step 106 follows step 104 and, in this step 106, the controller 62, by use of the sensors 64, 66, determines whether slip has occurred or is presently occurring. Particularly, in this step 106, the controller 62 receives the currently measured speed of the driveshafts 34, 36 from the sensors 64, 66 and uses these respective measurements to determine the occurrence of slip (e.g., in the manner set forth in the '778 or '443 patents) and/or to infer the speed of the pair of wheels 18, ~~20~~^{18'} and the speed of the pair of wheels ~~22, 24~~^{19, 19'}. Should the difference between the speed of the driveshafts 34, 36 or the first pair of axles 14, 15 and the second pair of axles 16, 17 or the first pair of wheels 18, ~~20~~^{18'} and the second pair of wheels ~~22, 24~~^{19, 19'} exceed a certain predetermined threshold, an immediate slip condition is sensed and step 106 is followed by step 108 in which immediate slip control corrective action is taken.

Replace Paragraph 0026 with the following new paragraph:

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[0026] There are several ways to determine, in step 109, whether a pre-emptive slip control mode is warranted. For example, in one non-limiting embodiment, the signals emanating from the sensors 64, 66 are subtracted and the difference is communicated to a one hertz low pass filter (not shown) in order to eliminate or reduce noise. Should the filtered difference continually exceed about two kilometers per hour for about one-half of a second, a pre-emptive slip condition is declared. Alternatively, a pre-emptive slip condition warranting a pre-emptive slip strategy may be declared when the value of "Y_i(k)" as calculated in the following equation, continually exceeds some torque transfer value, such as and without limitation, 0.50 or 50% for a period of about 200 milliseconds.

Replace Paragraph 0031 with the following new paragraph:

[0031] In this step 110, the controller 62, due to the declaration of the pre-emptive mode within step 109, determines or senses that vehicle 12 is traveling upon a surface having a relatively low coefficient of friction (e.g., a coefficient of friction equal to or less than 0.5) and enters a preemptive slip control mode of operation. Step 110 is followed by step 112 in which the controller 62 utilizes several sensed values to determine whether there is some likelihood for slip to occur. For example, the controller 62 will use the acquired speed of the axles ~~1417-14-17~~ in combination with the position of the accelerator member 55 and/or the throttle plate 53 in order to ascertain whether slip is likely (e.g., if there is a relatively low vehicular speed (about 20 miles per hour) and the position of the accelerator member 55 or the throttle plate 53 are greater than about half-way toward their respective "full" or maximum torque request position, the controller 62 will determine that slip is likely to occur.

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